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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,387	07/17/2003	Geoffrey Wehrman	1252.1071CIP3	8762

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EXAMINER

ROSE, HELENE ROBERTA

ART UNIT PAPER NUMBER

2163

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,387	Applicant(s) WEHRMAN ET AL.	
	Examiner Helene R. Rose	Art Unit 2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. This is a response to the amendment filed on 6/02/2006, in which claims 1-12 are pending.
2. Claim 9 has been amended; No claims were cancelled nor added.
3. Applicant's arguments filed on 6/02/2006, with respect to claims 1-12 have been fully considered (MPEP 714.04; 37 CFR 1.111) but they are not persuasive.

Claim Rejections – 35 U.S.C – 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Chan (US Patent No. 6,751,616).

Claims 1,5, and 10:

Regarding claims 1,5, 10, Chan teaches a method of relocating a metadata server in a network of computer system nodes in which DMAPI has been implemented (see Figure 1, all features, wherein a network is defined, column 5, lines 43-55, wherein relocating metadata server to be interpreted as data that is used to describe other data within a network environment, column 5, lines 56-67, wherein a data migration application programming interface is known to be a set of functions and semantics that can monitor events on files, see column 21, lines 58-61, and manage and maintain file, see column 21, lines 43-52, wherein lock management

commences, and data lock management performs and processes and maintains the master weight table, Chan) comprising:

retargeting objects on the computer system nodes accessing a current metadata server to a new metadata server (see Figures 8 and 9, all features, column 7, lines 10-13, and column 5, lines 50-51, wherein remapping to master nodes, Chan); and

releasing a lock on virtual metadata when relocation of the metadata server is underway during execution of operations on the virtual metadata (columns 9-10, lines 65-67 and lines 1-9, and column 12, lines 6-10, wherein the open lock table can be a virtual table constructed from separate open lock tables for each node, Chan).

Claims 2, 6, and 11:

Regarding claims 2, 6, and 11, Chan teaches wherein the virtual metadata is formed as a private data chain (column 12, lines 3-10, wherein the open lock table may be a single table with open locks and active nodes combined and replicated on all the active nodes in the cluster, and wherein the open lock table can be a virtual table constructed from separate open lock tables, in which separate is interpreted to be confined to particular place and private data is known accessed only by methods of the class in which it defines, Chan), and said method further comprises locking a pointer to the private data chain prior to linking to a first item of private data in the private data chain (see Figure 9, all features, wherein locking objects to the new master code followed by phase I done messenger and wherein private data is known to be data that can be accessed only by members of the class in which it defines and column 20, lines 9-20, Chan)

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Claims 3, 7, and 12:

Regarding claims 3, 7, and 12, Chan teaches a method further comprising waiting (column 24, lines 5-7, wherein minimum wait time has been exceeded, Chan), after said releasing (column 23, lines 32-33, wherein released to the next lock request in the queue, Chan), for availability of a lock on the pointer to the private data chain upon completion of relocation of the metadata server (columns 19-20, lines 43-62, and lines 4-8, wherein active nodes have requested locks on all three resources which includes the buffer and data blocks, where all three resources are open, and wherein the method of transferring lock information from an old master node to a new master node without completely freezing the processing of locks and column 23, lines 31-33, wherein locks are granted to the processes on the terminating nodes be released to the next lock request in the queue, Chan), before continuing with execution of operations on the virtual metadata (column 25, lines 11-18, wherein all of the information required to continue managing requesting locks are available in the master resource locator objects, Chan).

Claims 4 and 8:

Regarding claims 4 and 8, Chan teaches wherein said releasing, waiting and continuing execution of operations on the virtual metadata after relocation of the metadata server are performed transparently to users (column 8, lines 58-61, wherein light waves are defined as electromagnetic radiation with a wavelength that is visible to the eye also know to be transparent, wherein transparent is known as allowing light to pass through, and able to be seen through, Chan).

Claim 9:

Regarding claim 9, Chan teaches a cluster of computer systems, comprising:
storage devices storing at least one file (column 9, lines 55-61, wherein one download application provides for DLM, Chan);

a storage area network coupled to said storage devices (column 9, lines 50-63 and column 8, lines 49-56, wherein storage devices are defined, Chan);

at least one metadata server node, coupled to said storage area network; and metadata client nodes, coupled to said storage area network, to release a lock on virtual metadata when relocation of said at least one metadata server is underway during execution of operations on the virtual metadata (see Figure 1, all features, wherein a network is defined, column 5, lines 43-55, wherein relocating metadata server to be interpreted as data that is used to describe other data within a network environment, column 5, lines 56-67, wherein a data migration application programming interface is known to be a set of functions and column 21, lines 58-61, wherein semantics that can monitor events on files and column 21, lines 43-52, wherein lock management commences, and data lock management performs and processes and maintains the master weight table, Chan).

Prior Art Made of Record

(The prior art made of record and not relied upon is considered pertinent to applicant's disclosure)

1. Chan (US Patent No. 6,751,616) discloses techniques for a distributed lock manager for faster reconfiguration including using a constant hash function to associate each resource of a plurality of shared resources with a hash value.

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2. Costello et al. (US Patent No. 6,950,833) discloses a cluster of computer system nodes share direct read/write access to storage devices via a storage area network using a cluster filesystem.
3. Brandt et al. (Non-Patent Literature, Efficient Metadata Management in Large Distributed Storage System) discloses efficient metadata management is a critical aspect of overall system performance in large distributed storage systems.

Examiner Responses

6. Applicant argues/states the prior art fails to teach, *"anything that is done during relocation of a metadata server"*

Examiner respectfully disagrees. Referring to column 11, lines 35-41, wherein one message can hold the lock information for one resource being moved from an old master node to a new master node, wherein metadata server is interpreted to be moving from one node to another due to administrative actions, column 5, lines 28-34, wherein when the system is eventually reconfigured, for example when one of the original nodes goes down, a great deal of message traffic must be passed to move data from the old master resource locking objects, i.e., hereinafter RLOs, to the new masters RLOs on both the added nodes and the original nodes.

7. Applicant argues/states the prior art fails to teach, *"releasing or opening locks"*

Examiner respectfully disagrees. Referring to column 2, lines 55-60, wherein if the requested lock is not consistent with the granted lock, such as when both are exclusive locks for the same resource, as is typical during writes to a database, then the requestor, as is typical during writes to a database, then the requestor must wait until the database server holding the

granted lock releases the granted lock, wherein releases the granted lock is equivalent to opening locks.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

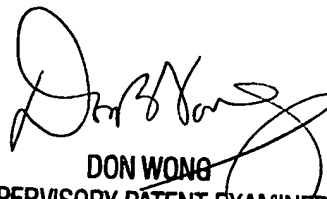
Point of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene R. Rose whose telephone number is (571) 272-0749. The examiner can normally be reached on 8:00am - 4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Helene R Rose
Technology Center 2100
July 26, 2006


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